

Appl. No. : 10/518,437
Filed : September 19, 2005

AMENDMENTS TO THE CLAIMS

Please cancel Claim 2, without prejudice.

Please amend Claim 1 as follows.

1. (Currently amended) A foam forming die comprising:
an inlet for inserting a molten resin containing a foaming agent from an extruder,
a hollow portion formed so as to permit the molten resin inserted to spread in the
widthwise direction, and
a channel for discharging the molten resin that has passed through the hollow portion and
is spread in the widthwise direction, wherein
one end of the channel is narrowed substantially only by two rotatable bodies to form a
discharge portion, the two rotatable bodies having an outer periphery substantially in the form of
a true circle in cross section and being disposed in parallel with their axes extending in the
widthwise direction, and the discharge portion for discharging the molten resin being formed by
a gap between the rotatable bodies,
the downstream side of the discharge portion is configured in such a manner that when
the molten resin discharged from the discharge portion is released, the pressure is reduced,
resulting in expansion of the molten resin, and
the two rotatable bodies, whose temperatures can be controlled by a temperature
regulator, can rotate in the molten resin discharging direction, and
the relationship between the height T of the channel and the smallest gap t between the
two rotatable bodies satisfies $T > 2t$, and the relationship between the radius R of at least one
rotatable body and the smallest gap t satisfies $R \geq 15t$.

2-5. (Cancelled)

6. (Previously presented) A foam forming die according to Claim 1, further comprising a
rotation adjusting means for increasing or decreasing the speed of rotation or torque of the
rotatable bodies.

7. (Previously presented) A foam forming die according to Claim 1, wherein the rotatable bodies are provided with projections extending from an outer peripheral surface thereof diametrically outward over the entire width.

8. (Previously presented) A foam forming die according to Claim 1 further comprising a forming device for forming a foam-formed article discharged from the discharge portion into a predetermined shape at the downstream side of the discharge portion, wherein the forming device comprises a channel through which the molten resin discharged from the discharge portion passes and a temperature regulator means,

the channel being higher than the discharge portion, and

the temperature regulator means controlling the temperature of the foam-formed article.

9. (Previously presented) A method of producing a foam-formed article, the method comprising forming a molten resin into a sheet, film or plate-like foam-formed article with the use of a foam forming die according to Claim 1.

10. (Previously presented) A method of producing a foam-formed article, the method comprising forming a molten resin into a profiled foam-formed article with the use of a foam forming die according to Claim 1.

11. (Previously presented) A method of producing a foam-formed article comprising: producing a formed article in the form of a solid-solution wherein 5% by weight or more of the foaming agent contained in the article is unevaporated, by cooling a rotatable body using a foam-forming die according to Claim 1, and producing a foam-formed article by heating the formed article.

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12. (Previously presented) A foam-forming die according to Claim 8, wherein the forming device comprises a pair of plate-like forming members and the channel being formed between the two forming members.

13. (Previously presented) A foam-forming die according to Claim 12, wherein the forming members are composed of a heat cooling jacket in which a heat cooling medium circulates.

14. (Previously presented) A foam-forming die according to Claim 12, wherein a contact surface of the pair of forming members defining the channel is coated with a fluororesin.

15. (Previously presented) A foam-forming die according to Claim 8, wherein the forming device is provided with a pair of roller units and the channel being formed between the two roller units.